

WHAT IS CLAIMED IS:

1. A method, comprising:  
identifying text to convert to speech;  
5 selecting a speech style sheet from a set of available speech style sheets, said  
speech style sheet defining desired speech characteristics;  
marking said text to associate said text with said selected speech style sheet; and  
converting said text to speech having said desired speech characteristics by  
applying a low level markup generated by said speech style sheet.  
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2. A method according to claim 1, further comprising:  
sending said text with said low level markup to an output device.
3. A method according to claim 1, further comprising:  
identifying at least one low level markup;  
15 defining a voice style at least in part by associating said voice style with said at  
least one low level markup; and  
associating a speech style sheet with said voice style.
4. A method according to claim 3, wherein said associating said speech style sheet  
with said voice style includes:  
20 creating said speech style sheet.
5. A method according to claim 3, wherein said associating said speech style sheet  
with said voice style includes:  
editing said speech style sheet.
6. A method according to claim 1, wherein said low level markup defines at least  
25 one of a pitch, a prosody, a voice quality, a duration, a tremor, a timbre, a speed, an  
intonation, a timing, a volume, and a pronunciation rule.

7. A method according to claim 1, further comprising:  
providing said speech style sheet to at least one of a text-to-speech developer and  
a text-to-speech device.
8. A method according to claim 1, further comprising:  
5 compiling a library of speech style sheets.
9. A method according to claim 1, further comprising:  
identifying at least one low level markup;  
associating a speech style sheet with said at least one low level markup.
10. A method according to claim 1, wherein said speech style sheet is selected from a  
10 menu of available speech style sheets.
11. A method according to claim 1, wherein said marking of said text includes  
annotating said text with an annotation such as underlining, bolding, italicizing,  
highlighting, color-coding, coding, adding a symbol, a mark, or a design.
12. A method according to claim 1, wherein said converting said text to speech  
15 includes:  
identifying said low level markup associated with said speech style sheet; and  
converting said marking of said text to said low level markup.
13. A method according to claim 1, wherein said marking of said text further  
associates said text with a voice style associated with said speech style sheet.
- 20 14. A method according to claim 13, wherein said voice style represents at least one  
of an age, an educational level, an emotion, a feeling, a physical trait, a personality trait,  
and a speech category.

15. A method according to claim 1, wherein said low level markup allows a text-to-speech developer to convey a certain amount of information using less text.
16. A method according to claim 1, wherein said selecting is performed by a text-to-speech developer not having expertise in voice arts.
- 5 17. A speech style sheet, comprising:  
at least one voice style associated with at least one voice-type, said at least one voice style relating a high level markup of said voice-type to a low level markup of said voice-type.
- 10 18. The speech style sheet according to claim 17, wherein said high level markup of said voice-type is a text markup.
19. The speech style sheet according to claim 17, wherein said high level markup includes at least one of an underlining, a bolding, an italicizing, a highlighting, a color-coding, an annotation, a coding, and an application of at least one of a symbol, a mark, and a design.
- 15 20. The speech style sheet according to claim 17, wherein said low level markup of said voice-type includes code causing generation of speech having particular speech properties.
- 20 21. The speech style sheet according to claim 17, wherein said low level markup defines at least one of a pitch, a prosody, a voice quality, a duration, a tremor, a timbre, a speed, an intonation, a timing, a volume, and a pronunciation rule.
22. The speech style sheet according to claim 17, wherein said at least one voice style represents style characteristics such as an age, an educational level, an emotion, a feeling, a physical trait, a personality trait, and a speech category.

23. The speech style sheet according to claim 17, wherein said speech style sheet is at least one of a programming object, a programming module, a computer program, or a computer file.

24. An apparatus, comprising:

5 a processor having access to at least one speech style sheet, said at least one speech style sheet containing a definition of a voice style associated with a voice-type, and said definition relating a high level markup of said voice-type to a low level markup of said voice-type, wherein said processor is operative to convert said high level markup to said low level markup;

10 a user interface device for applying said at least one voice style to text associated with said voice-type, said user interface being in communication with said processor; and  
an output device connected to said processor for converting said text with said low level markup to speech.

15 25. The apparatus of claim 24, wherein said processor includes at least one of a text-to-speech engine and a text normalizer.

26. The apparatus according to claim 24, wherein said low level markup defines at least one of a pitch, a prosody, a voice quality, a duration, a tremor, a timbre, a speed, an intonation, a timing, a volume, and a pronunciation rule.

20 27. The apparatus according to claim 24, wherein said high level markup includes at least one of an underlining, a bolding, an italicizing, a highlighting, a color-coding, an annotation, a coding, and an application of at least one of a symbol, a mark, and a design.

28. The apparatus according to claim 24, wherein said voice style represents at least one of an age, an educational level, an emotion, a feeling, a physical trait, a personality  
25 trait, and a speech category.

29. A system, comprising:
- a designer device for creating speech style sheets;
  - a speech style sheet at least partially created by said designer device, said speech style sheet defining a voice style;
  - 5 a text-to-speech device for receiving text associated with a voice-type, said text having a high level markup associated with said voice style, said text-to-speech device having access to said speech style sheet and also having:
    - a memory for storing computer executable code; and
    - a processor for executing the program code stored in memory, wherein the
  - 10 program code includes:
    - code to determine, by accessing said speech style sheet, a low level markup associated with said high level markup; and
    - code to convert said high level markup of said text to said low level markup; and
  - 15 an output device for producing expressive speech using said text with said low level markup, said output device in communication with said text-to-speech device.
30. The system according to claim 29, further comprising:
- a developer device in communication with said text-to-speech device, said developer device for marking text and providing said text to said text-to-speech device.
- 20 31. The system according to claim 29, further comprising:
- a user interface device in communication with said text-to-speech device, said user interface device for applying high level markup to text and providing said text to said text-to-speech device.
32. An article of manufacture, comprising:
- 25 a computer usable medium having computer readable program code means embodied therein for producing expressive text-to-speech, comprising:
    - computer readable program code means for identifying text to convert to speech;

computer readable program code means for selecting a speech style sheet from a set of available speech style sheets, said speech style sheet defining desired speech characteristics;

5 computer readable program code means for marking said text to associate said text with said selected speech style sheet; and

computer readable program code means for converting said text to speech having said desired speech characteristics by applying a low level markup associated with said speech style sheet.

33. A system for producing expressive text-to-speech, comprising:
- 10 means for identifying text to convert to speech;
- means for selecting a speech style sheet from a set of available speech style sheets, said speech style sheet defining desired speech characteristics;
- means for marking said text to associate said text with said selected speech style sheet; and
- 15 means for converting said text to speech having said desired speech characteristics by applying a low level markup associated with said speech style sheet.